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Remarks

The Office Action mailed May 19, 2005 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-20 are now pending in this application. It is respectfully submitted that the pending claims define allowable subject matter.

The rejection of Claims 1-10, 12-16, and 18-20 under 35 U.S.C. § 103(a) as being unpatentable over Guterrez (U.S. Patent No. 6,585,540) in view of Farrar et al. (U.S. Patent No. 4,726,638) is respectfully traversed.

Guterrez et al. describe a multi-connector electronic assembly including a housing (202) having plug recesses (212) therein. The housing element includes a plurality of cavities (234) which receive component packages (232), (234). A shield substrate (260) is disposed on a bottom face of the housing and in one embodiment includes metallic shielding material (266) to shield the bottom of the connector assembly against electronic noise transmission. An external noise shield (272) may also be provided, and the shield (272) may be electrically coupled to the shielding material (266) and ultimately to ground. See Guterrez et al. col. 9, lines 10-16.

The Office Action cites col. 2, lines 30-34 of Guterrez et al. as disclosing that magnetic components (230) are provided for suppressing EMI/RFI in incoming and outgoing signals, although col. 2 lines 30-34 provides no direct support for either proposition. Rather, col. 2, lines 30-34 only states that signal/filtering conditioning components are optionally provided. As described by Guterrez et al., the component packages (230), (232) are used to condition an electrical signal transmitted via the associated connector, and Guterrez et al. define "condition" to include "signal voltage transformation, filtering, current limiting, sampling, processing, and time delay." See Guterrez col. 13, lines 42-58. Applicants submit that Guterrez et al. nowhere state that filtering is performed to address EMI/RFI issues, and Guterrez et al. nowhere state that

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filtering is accomplished in incoming and outgoing signals. Guiterrez et al. is simply silent on these issues.

Notably, the Guiterrez et al. device is not unlike the modular jack described in paragraph 4 of the present application. That is, the Guiterrez et al. device, at least in some embodiments, includes a jack having magnetic components within the jack and internal to a conductive shell surrounding the jack for filtering signal lines within the jack. As explained in paragraph 5 of the present application, this arrangement is believed to be problematic and may actually increase the susceptibility of the jack to EMI/RFI.

Farrar et al. is cited for disclosing a modular jack having a shield (18) with a ground plane (28). Farrar et al., however, describe a transient surge suppression assembly (10) that may be used in a modular jack assembly. Element (18) is described as a dielectric substrate having a first surface (24) with a plurality of conductive paths (34), a second surface (26) having a ground conductor surface area (28), and lead-receiving apertures (30), (32) for mounting of transient suppression means (12) and electrically conducting the conductive paths (34) with the ground conductor (28). It is apparent that the element (18) is provided to protect the connector from transient voltage and provides a minimum inductance ground path for suppressing transient voltages. In contrast to the present invention, the substrate (18) of Farrar et al. is not provided to suppress EMI/RFI in incoming and outgoing signals transmitted through signal conductors, but rather the substrate (18) diverts the entire signal to ground via the transient surge suppression means (12) when they operate. In other words, the substrate (18) does not suppress EMI/RFI in signal transmissions, but rather suppresses the signal itself when transient voltage conditions occur. In the absence of transient voltage conditions, the substrate (18) does not suppress any portion of the signal, EMI/RFI portions or otherwise. Additionally, Farrar et al. does not describe the element (18) as providing for bi-directional signal transmission and suppression or filtering for incoming and outgoing signals.

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Claim 1 recites a modular receptacle jack comprising: "a housing comprising a jack interface and an exterior surface," "a shield extending over at least a portion of said exterior surface, said shield comprising an interior face, an exterior face, signal conductors extending between said interior face and said exterior face, and a ground plane," and "a plurality of magnetic components coupled to one of said interior face and said exterior face, each of said magnetic components directly grounded to said ground plane of said shield, thereby avoiding common impedance coupling of said contacts and suppressing EMI/RFI in incoming and outgoing signals transmitted through the signal conductors of said shield."

Neither of Guterrez et al. nor Farrar et al., considered separately or in combination, describe or suggest a shield having an interior face, an external face, and signal conductors extending therebetween, and a plurality of magnetic components coupled to one of said interior face and said exterior face, each of said magnetic components directly grounded to said ground plane of said shield, thereby avoiding common impedance coupling of said contacts and suppressing EMI/RFI in incoming and outgoing signals transmitted through the signal conductors of said shield. Neither Guterrez et al. nor Farrar et al. describe or suggest that common impedance coupling is problematic and is a contributing factor to EMI/RFI transmitted through the contacts, and neither reference discloses a structure capable of addressing such concerns.

Further, neither of the references disclose EMI/RFI suppression in incoming and outgoing signals. Guterrez et al. nowhere describe that the component packages (230), (232) suppress EMI/RFI in incoming and outgoing signals from the jack. Rather, Guterrez describe the component packages as providing signal voltage transformation, filtering, current limiting, sampling, processing, and time delay, most of which are incompatible with bi-directional communication. As noted previously, Guterrez et al. nowhere states, describes or suggests that filtering is performed to address EMI/RFI issues in incoming or outgoing signals. Guterrez et

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al. only discusses noise issues only with respect to the shields (266) and (272). Farrar et al. does not address EMI/RFI suppression issues at all

For at least the reasons set forth above, Claim 1 is therefore submitted to be patentable over Guiterrez et al in view of Farrar et al.

Claims 2-7 depend from claim 1, and when the recitations of claims 2-7 are considered in combination with the recitations of claim 1, claims 2-7 are likewise submitted to be patentable over Guiterrez et al. in view of Farrar et al.

Claim 8 recites a modular receptacle jack, comprising "a housing comprising a jack receptacle and a plurality of signal contacts within said receptacle," and "a shield extending over an outer surface of said housing, said shield comprising a printed circuit board having a ground plane and a plurality of magnetic components coupled to a surface of said printed circuit board and directly grounded to said ground plane, wherein EMI transmission is suppressed as signals pass from the signal contacts within the housing to an external space and as signals pass from the external space to the signal contacts."

Guiterrez et al. in view of Farrar et al., for the reasons set forth above, neither describe nor suggest a shield including a circuit board having a ground plane, and magnetic components directly grounded to the ground plane, wherein EMI transmission is suppressed as signals pass from the signal contacts within the housing to an external space and as signals pass from the external space to the signal contacts. Neither of the references, considered separately or in combination, teach the structure and function of the ground plane the and the magnetic components as recited in claim 8.

Rather, as noted above, conductor terminals of the Guiterrez et al. component packages (230), (232) are passed through the substrate shield (260) and, instead of being grounded to the shield, are electrically connected to traces (608) on a circuit board (606) that is presumably

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connected to ground. Also, the Guterrez et al. connector is not believed to be capable of suppressing EMI transmission as signals pass from the signal contacts within the housing to an external space and as signals pass from the external space to the signal contacts as recited in claim 8. Rather, Guterrez et al. indicate that the component packages are provided for other purposes. Nowhere does Guterrez et al. describe or suggest that the component packages are provided for EMI shielding purposes, or that the component packages are capable of bi-directional EMI suppression as claim 8 recites. Farrar et al. describe a transient voltage assembly that does not address EMI/RFI issues, and does not address incoming and outgoing signals.

Claim 8 is therefore submitted to be patentable over Guterrez et al.

Claims 9, 10 and 12 depend from claim 8, and when the recitations of claims 9, 10 and 12 are considered in combination with the recitations of claim 8, claims 9, 10 and 12 are likewise submitted to be patentable over Guterrez et al. in view of Farrar et al.

Claim 13 recites a modular receptacle jack comprising "a housing comprising a jack receptacle and a plurality of signal contacts within said receptacle," and "a shield extending over an outer surface of said housing, said shield comprising a circuit board having at least one aperture therethrough for passage of a signal conductor, and at least one magnetic component coupled to a surface of said printed circuit board adjacent said aperture, said shield further comprising a ground plane and said at least one magnetic component directly connected to said ground plane for suppressing EMI transmission therethrough, thereby providing clean bi-directional communication through said signal contacts while avoiding common impedance coupling of said signal contacts."

Guterrez et al. in view of Farrar et al., for the reasons set forth above, neither describe nor suggests a shield comprising a ground plane and said at least one magnetic component

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directly connected to said ground plane for suppressing EMI transmission therethrough, thereby providing clean bi-directional communication through said signal contacts while avoiding common impedance coupling of said signal contacts in the modular jack as recited in claim 13. In combination, the cited references fail to disclose all of the structure and function recited in claim 13. For example, neither of the reference address bi-directional communication through signal contacts while avoiding common impedance coupling.

Claim 13 is therefore submitted to be patentable over Guitierrez et al. in view of Farrar et al.

Claims 16 and 18-20 depend from claim 13, and when the recitations of claims 16 and 18-20 are considered in combination with the recitations of claim 13, claims 16 and 18-20 are likewise submitted to be patentable over Guitierrez et al. in view of Farrar et al.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-10, 12-16, and 18-20 be withdrawn.

The rejection of Claims 11 and 17 under 35 U.S.C. § 103 as being unpatentable over Guitierrez et al. in view of Farrar et al. and further in view of Belopolsky et al. (U.S. Patent No. 6,036,547) is respectfully traversed.

It is respectfully submitted that Belopolsky et al. does not cure the deficiencies of Guitierrez et al. in view of Farrar et al. with respect to the present claims. Belopolsky et al. nowhere describe directly grounding magnetic components to a ground plane of a shield for a modular jack, and do not discuss EMI/RMI shielding concerns. Rather, Belopolsky only addresses crosstalk issues between the signal contacts. Thus, it is respectfully submitted that Belopolsky et al. adds nothing to the teaching of Guitierrez et al. and Farrar et al. with respect to the instant claims.

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Claims 8 and 13 are therefore submitted to be patentable over Guitierrez et al. in view of Farrar et al. and further in view of Belopolsky et al., and when the recitations of claims 11 and 17 are considered in combination with the recitations of claims 8 and 13, claims 11 and 17 are likewise submitted to be patentable over Guitierrez et al. in view of Farrar et al. and further in view of Belopolsky et al.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 11 and 17 be withdrawn.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 11 and 17 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



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